Amendments to the claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 to 3 are cancelled.

4.(Original) A method of transmitting packets received from a connectionless network wherein each packet includes a destination network address, the method including: providing a forwarding table wherein each network address is associated with a single interface index which dictates an output port and a connection over which corresponding packets should transported; forwarding a connectionless packet to an output port based on an interface index obtained from the forwarding table and transmitting the connectionless packet over the corresponding connection, maintaining a routing table for routing connectionless packets over a connection-oriented network, said routing table associating each network address with one or more interface indexes, associating each interface index with an application, one application being connectionless routing and one application being label switching; and downloading interface indexes from said routing table to corresponding entries in said forwarding table such that the label switching application has a higher priority than the connectionless routing application.

5(Original). A method of transmitting packets including: receiving (a) connection-oriented packets having a label associated therewith, said label being a connection identifier, and (b) connectionless packets carrying a network address and having no label associated therewith; providing a forwarding table wherein each network address is associated with a single interface index which dictates an output port and a connection over which corresponding connectionless packets should transported, providing a switching table for switching ingress labels into egress labels; forwarding a connectionless packet to an output port based on an interface index obtained from the forwarding table; forwarding a connection-oriented packet to an output port based on said switching table; transmitting connection-oriented and connectionless packets over the

corresponding connections; maintaining a routing table for routing connectionless packets over a connection-oriented network, said routing table associating each network address with one or more interface indexes; associating each interface index with an application, one application being connectionless routing and one application being label switching, and downloading interface indexes from said routing table to corresponding entries in said forwarding table such that the label switching application has a higher priority than the connectionless routing application.

6.(Original) A network node, comprising: a plurality of input and output ports operative to receive and transmit packets carrying a connection identifier for transport over a connection-oriented network; switching logic for switching said connection-oriented packets from one of said input ports to one of said output ports based on one of said connection identifiers; segmentation and re-assembly logic for enabling said ports to assemble connectionless packets from the payloads of one or more connection-oriented packets on ingress and to segment each such connectionless packet into one or more connection-oriented packets on egress, each said message packet carrying a network address for transport over a connectionless network; forwarding logic for forwarding connectionless packets from one of said input ports to one of said output ports, said forwarding logic including a forwarding table which associates a network address or a group of network addresses with a single interface index, said interface index indicating the identity of one of said output ports and enabling a connection identifier to be specified for segmentation of the connectionless packet at the indicated output port; routing logic for forwarding a connectionless packet to a next-hop based on the network address carried by the packet, said logic including a routing table which associates a network address or group thereof with at least one interface index, said logic being enabled to download an interface index for a given network address or group thereof from said routing table to the same network address entry in said forwarding table time, and logic for setting up a label switched path wherein a connectionless packet is associated with a connection identifier which functions as a label so that transit nodes in the label switched path can switch the connection-orientated packets constituting connectionless packets based on the connection identifier without re-assembling the connectionless packets, said

logic associating the label switched path with an interface index; wherein said interface indexes are associated with a priority hierarchy in which interface indexes associated with label switched paths have a higher priority than interface indexes associated with connectionless routing, and wherein said routing logic does not overwrite a forwarding table entry having an interface index associated with a label switched path with an interface index associated with connectionless routing.

7. (New) A method of operating a communications network having a plurality of interconnected nodes wherein connectionless packets are forwarded over a connection-oriented infrastructure within a connectionless network, and wherein said communications network includes a label switched domain, the method comprising:

examining incoming connectionless packets at an ingress node to said label switched domain to identify connectionless destination addresses therefor;

establishing label switched paths for forwarding said connectionless packets from egress ports of the ingress node toward destination addresses in said label-switched domain;

establishing label distribution protocol sessions to manage said label switched paths;

maintaining a database to keep track of said label distribution protocol sessions;

maintaining a forwarding table to associate interface indices with corresponding network addresses, wherein said interface indices determine an egress port associated with corresponding destination addresses;

attaching an interface index to an incoming packet based on its destination address; and

forwarding said incoming packet to the egress port determined by its associated interface index.

8. (New) The method of claim 7, wherein once the destination address for an incoming packet has been determined, the forwarding table is examined to identify the closest entry to said destination address, and the interface index associated with said closest entry is assigned to the packet.

9. (New) The method of claim 8, wherein said closest entry is associated with a forward equivalency class for the incoming packet.

10. (New) The method of claim 8, wherein a label switched path is established for each forward equivalency class.

11. (New) The method of claim 10, wherein signalling links are established between nodes forming part of said label switched domain, and a label request message for a forward equivalency class destination is transmitted over a said signalling link to a downstream node.

12. (New) The method of claim 11, wherein the downstream nodes request next hop routing information for the forward equivalency class destination from a label switched routing table at the downstream node.

13. (New) The method of claim 7, wherein in the event of a label distribution session protocol failure at a particular node, said particular node sends a label withdraw message to an upstream node for each label switched path associated with the label distribution protocol session.

14. (New) The method of claim 7, wherein connection-oriented cells arriving at said label switched domain are re-assembled into said connectionless packets at the ingress node to determine the connectionless destination address.

15. (New) The method of claim 11, wherein each node in the label switched domain includes a label management system task receiving signalling messages from other nodes in the label switched domain.

16. (New) The method of claim 15, wherein the label management system task runs a state machine for each label switched path.